

**Amendments to the Claims:**

1. (Original) A sensor for monitoring gas content, the sensor comprising:  
a housing defining at least two cavities;  
a resonating structure positioned in each of the cavities, each of the resonating structures having a resonant frequency dependent upon a physical characteristic of a gas in its respective cavity;  
means for exciting the resonating structures to generate output signals therefrom; and  
means for comparing the output signals from each of the resonating structures and outputting a comparison signal indicative of one or more differences between the resonant frequencies of the at least two structures and the relative gas content of the cavities.
2. (Original) A sensor according to claim 1, further comprising a passageway associated with each cavity; and  
means for controlling flow of atmospheric gas into the cavities via their respective passageways.
3. (Currently Amended) A sensor according to claim 1, ~~or claim 2,~~ wherein the physical characteristic is density.
4. (Original) A sensor according to claim 3, wherein each resonator structure includes at least one compliant element and at least one inertial element.

5. (Currently Amended) A sensor according to claim 1 ~~or claim 2~~, wherein the physical characteristic is the speed of propagation of sound through the gas.
6. (Original) A sensor according to claim 5, wherein the resonator structure includes at least one spring element and at least one perforated mass element.
7. (Currently Amended) A sensor according to ~~any preceding claim~~, claim 1, further comprising at least one filter unit positioned to prevent entry of solid and liquid contaminants into at least one of the cavities.
8. (Currently Amended) A sensor according to ~~any preceding claim~~, claim 1, wherein ~~the one or more~~ at least one of the resonator structures ~~are~~ is formed from a micromachined silicon structure.
9. (Currently Amended) A sensor according to ~~any preceding claim~~, claim 1, wherein the means for exciting the resonating structures and for comparing the output signals is provided by at least one application specific integrated circuit (ASIC).
10. (Original) A sensor according to claim 9, wherein the ASIC further comprises at least one of a component for self-diagnostics, a component for digital communication, and a component for advanced signal processing.
11. (Currently Amended) A sensor according to ~~any preceding claim~~, claim 1, further comprising a pressure equalization member positioned between the cavities.